

THE OCCURANCE OF AUTOGENIOUS WATER-GAS SHIFT REACTION ON HYDROGENATION OF SUB-BITUMINOUS COALS. M. Gawlak, D. Carson, H. Wasylyk, B. Ignasiak, Alberta Research Council 11315 - 87 Avenue, Edmonton, Alberta, Canada, T5G 2C2.

Two subbituminous Alberta Coals (21-22% O, on daf matter) were liquefied in a continuous unit, in a recycle mode, with hydrogen. Independently, autoclave liquefaction tests were carried out in hydrogen using recycle solvent from continuous liquefaction as a medium. The results revealed that in both cases from 10-30% of the hydrogen consumed on liquefaction (4-6% by weight of daf coal) was used up for generation of water. However, when the same coals were liquefied in autoclave under similar conditions but in anthracene oil, a water-gas shift reaction occurred which resulted in net consumption of water introduced with coal into autoclave. The results are tentatively interpreted in terms of different acidity of solvents in relation to metals contents of the treated coals.